U.S. Application No. <u>09/630,435</u> - Filed: <u>August 1, 2000</u>

Amendment Dated: May 11, 2004

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Reply to Office Action Dated: February 13, 2004

Amendments to the Specification:

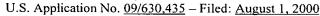
Please replace the paragraph beginning at page 1, line 27, with the following rewritten paragraph:

In the field of color electrostatography it is known to separately form a plurality of color separation images and serially transfer them to a receiver sheet in superposed registered relationship to form full-color or process color images on the receiver sheet. For example, color separation images of cyan, magenta, yellow, and optionally black may be combined to form these full color or process color images. A particularly suitable example of color electrophotographic apparatus is described in U.S. Patent No. 6,075,965, the contents of which are incorporated herein by reference. In apparatus of the type described in the aforementioned patent color separation image data of one or more jobs is stored in a job image buffer (JIB) and color reproductions are made by outputting the image data from the JIB to each of four electronic writers such as LED printheads or laser printheads to record individual color separation electrostatic images on a charged photoconductive surface. Electrostatic images are then developed with a respective color toner and transferred either directly or indirectly via [a] an intermediate transfer roller or belt to a receiver sheet that is moved from station to station to cause the toner images to be transferred to the receiver sheet in superposed registered relationship. Alternatively, it is known to transfer the developed different color separation images to an intermediate transfer belt or drum in superposed relationship and then transfer the full-color image to the receiver sheet.

Please replace the paragraph beginning at page 7, line 12, with the following rewritten paragraph:

As noted in U.S. Patent No. 5,694,224 in gray level printing, each pixel has the capability to be rendered in several different dot sizes or densities, and thus different gray levels. The number of gray levels is at least three whereas in a binary system only two levels are possible, background and highest density. However instead of simply providing each pixel with an independent gray level, several pixels may be organized together to form a super pixel, or cell. Each of the pixels in a cell is then provided with a gray level. The human visual response integrates the various gray levels of the individual pixels in the cell to a single perceived gray level for the cell. This is similar to the basic concept of binary halftoning. The number of tone





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skills levels for a cell is increased greatly, however, due to the number of different gray levels available for each pixel. For example, instead of only the two levels provided in binary halftoning for each pixel, 256 levels (including zero) can be provided with gray level printing for each pixel in the cell. The formation of the dots in the pixels of the cell can be performed in a number of different manners to achieve different desired results. The dots can be formed as "full" dot, "partial" dot, "mixed" dot or fixed dot to provide gray level halftoning. The partial dot formation process and mixed dot formation process are described in the aforementioned U.S. Patent No. 5,694,224.

Please replace the paragraph beginning at page 9, line 29, with the following rewritten paragraph:

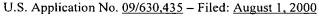
A 1D (one dimensional) global color process control LUT 12 is used at

the beginning to ensure the possibility of last-minute tuning of preference color even during the running of the printer after the images have already been RIPed (raster image processed). One input to LUT 12 is the 8 bit input data for the color separation image. The second input to LUT 12 is a color tweaking value for adjusting saturation of the color separation image. As shown in FIG. 18 there is provided a schematic illustrating the gray level input into LUT 12 and the corresponding gray level output from LUT 12 and the range of adjustments possible by modifying the color saturation on the output by the operator providing a color tweaking adjustment input that is available at the control panel of the workstation WS in FIG. 19. It will be noted that this input comes after the job image buffer and is effectively modifying image data after the image data is output from the job image buffer. Thus experimentation may be done by the operator in making copies (such as proof copies) with various tweaking adjustments without rescanning of original hardcopy documents or rerasterizing of the image data when the data is presented in electronic form as indicated in blocks 424 and 425 in FIG. 19. The job image buffer, JIB (424) buffers many ripped and compressed color separation files (C,M,Y,K), and pass a separation file page to the color separation page buffer (425) which decompresses the compressed image data and stores the page separation file for further processing, including real-time global color tweaking (see FIG. 1) based on last minute customer preference information from the WS. The yellow color separation page buffer and



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subsequent processing is shown in FIG.19 explicitly. The other equivalent color



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separation page buffers and subsequent processing for C, M and K channels are implied in FIG. 19. Preference color tweaking provides the last step of minor color adjustment to allow a user to adjust color if the user doesn't like the color being printed as may be observed from a proof print. Thus a de-saturated color may be adjusted back to a more saturated color. There may be provided the boosting of a specific color in the image. The coloring is not intended to provide fine-tuning of each color to be color accurate or to match color as a known color management process may be provided in a front end portion of the machine prior to rasterization. For full color or process color processes (cyan, magenta, yellow and optionally black) color tweaking is preferably performed before halftone processing because there are improved results obtained by modifying the contone (continuous tone) data rather than the halftone processed data. An advantage of having adjustments be provided to the contone data is that modifications to a dot structure or dot data formed after a halftone process may introduce unwanted artifacts (interaction from other color channels) in the dot structure and tends to provide more color variations or at least tends to be more difficult to predict/control adjustment of color.

